Yuzhou Zhu

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Dalian, Liaoning, China

Education

- **Dalian University of Technology** *September 2023 - June 2027*
  Bachelor of Science Dalian, China
  - Major: Mathematics
  - GPA: 93.1/100

Projects

- **SAKR: Enhancing RAG via Streaming + K-Means** *ICIC 2025 (accepted 2025-06-26)*
  Tools: PyTorch, FAISS [] [arXiv]
  - Streaming RAG with heavy-hitter + online k-means.
- **From Static to Dynamic: Streaming RAG** *Under review (AAAI 2026)*
  Tools: Python, FastAPI [] [arXiv]
  - Real-time KB updates with bounded state changes.
- **SinBasis Networks: Matrix-Equivalent Periodic Priors** *Under review (AAAI 2026)*
  Tools: PyTorch, NumPy [] [arXiv]
  - Sinusoidal basis reparam for wave-like spectrograms.
- **Functional-Basis Neural Layers** *In prep (ICLR 2026)*
  Tools: PyTorch, NumPy []
  - Trainable basis-weight layers; functional universal approximation.

Patents and Publications

C=Conference, J=Journal, P=Patent, S=In Submission, T=Thesis

[C.1] **Yuzhou Zhu**, et al. (2025). **SAKR: Enhancing Retrieval-Augmented Generation via Streaming Algorithm and K-Means Clustering**. In *Proceedings of the 2025 International Conference on Intelligent Computing*. Accepted on Jun 26, 2025.

[S.2] **Yuzhou Zhu**, et al. (2025). **From Static to Dynamic: A Streaming RAG Approach to Real-time Knowledge Base**. Manuscript submitted to *AAAI 2026*.

[S.1] **Yuzhou Zhu**, et al. (2025). **SinBasis Networks: Matrix-Equivalent Feature Extraction for Wave-Like Optical Spectrograms**. Manuscript submitted to *AAAI 2026*.

[S.3] **Yuzhou Zhu**, et al. (2025). **Functional-Basis Neural Layers: Learning Adaptive Weight Functions for Universal Approximation**. In preparation for submission (Target: *ICLR 2026*).

Skills

- **Programming Languages:** Python, C/C++, Java, Matlab
- **Data Science & Machine Learning:** Pytorch, Tensorflow
- **Specialized Area:** Neural Network, RAG, Algorithms, Algebra, Probability

Honors and Awards

- **National Scholarship of China** *2024*
  Ministry of Education of China
  - Highest national undergraduate merit scholarship; highly selective; outstanding academic performance
- **National Undergraduate Mathematics Competition (CMC) — Professional Group** *2023–2024*
  Chinese Mathematical Society
  - Provincial First Prize and National Second Prize in both 2023 and 2024
  - Demonstrated strength in calculus and analysis, algebra, and combinatorics problem solving

Leadership Experience

- **ICPC Team Captain / Algorithm Competition Association's Vice President** *2024 – Present*
  Dalian University of Technology [] []
  - Authored core C++ competitive programming templates (graphs, DP, number theory, ...) and compiled code
  - Developed Java data-structure and algorithm reference implementations shared with undergraduate students